IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	10/824,792	Confirmation No. 6663
Applicants	:	Stephen Michael Marceau et al.	
Filed	:	04/14/2004	
Title	:	Check Image Access System	
Assignee	:	Integrated Data Control, Inc.	
TC/A.U.	:	3691	
Examiner	:	Havan, Thu Thao	
Docket No.	:	7706.020CIP	

Honorable Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

37 CFR § 1.132 DECLARATION OF STEPHEN MARCEAU

I, Stephen Marceau, state as follows:

1. I am over 21 years of age and am competent to make this declaration. All statements made of my own knowledge are true and all statements made on information and belief are believed to be true.

2. I am one of the inventors of the Check Image Access System described, illustrated, and claimed in U.S. Patent App. No. 10/824,792 ("the '792 application"), filed on April 14, 2004.

3. I am also the Vice President of Indacon, Inc., a company that has worked since 2002, and devoted over 50,000 man-hours and invested over $2,500,000, to develop the invention.

4. Indacon has developed, and continues to develop, a system, marketed under the registered trademark OneClick Banking,® that meets the limitations of many of the claims of the '792 application.

5. In this declaration, I describe the long-felt need for the claimed invention, provide evidence of skepticism by others, describe Indacon, Inc.'s progress in commercializing the invention, and explain how the invention, as a whole, has been neither "obvious" to try nor easy to implement.

I. The Claims

6. The '792 application has five (5) pending independent claims.

7. Claim 1 recites a method of recording and perusing financial transaction information. First, a financial institution is provided with index generating software operable to generate a downloadable index and archive of images of multiple cleared paper checks. The archive contains images of the cleared paper checks, deposit slips, and other archival documents that support bank transactions and the index provides searchable references to those images. (We can supply any archival documents relating to any bank transaction documents like backup for lock box transactions, notes to the bank along with electronic renditions of other documents the customer may want to include in the database such as the contents of his safe deposit box.) Second, customers of the financial institution are provided with complementary software operable to open the downloadable index and archive of images of multiple cleared paper checks and display, read, send, and otherwise use those images.

8. Claim 15 recites a financial transaction indexing system comprising two complementary software products. First, an index generating software program residing on a remote computer serving a financial institution is operable to generate an index and an archive of images of multiple cleared paper checks maintained for the financial institution. Second, a customer application residing on a personal computer serving a customer of the financial institution is operable to open a downloaded index and archive, search the index, and display,

read , send, and otherwise use selected cleared paper check and other archival images of bank documents images from the archive.

9. Claim 21 recites a method of preparing and transmitting financial transaction information from a financial institution to an account customer. First, the financial institution is given a software program that periodically generates digital archives of the customer's cleared paper check images and other archival images of bank documents. Each archive contains the images of multiple cleared paper checks. Second, the customer is given secure online access to the digital archives enabling the customer to download and store the digital archives of cleared paper check images and other archival images of bank documents.

10. Claim 31 recites a method for a financial institution to deliver an electronic financial statement to a customer that includes financial check and transaction images and a searchable index. First, an archive is created of the images of a plurality of a financial account customer's paper checks and transactions that have cleared the customer's financial account. Second, a search index is generated of preselected check information that is linked to the corresponding images of a financial account customer's paper checks and transactions. Third, the customer downloads the archive of images and index to his or her computer and uses a computer software application to search the preselected fields and view any of the corresponding paper check images.

II. Long-felt but unmet need

11. There has been a very long felt need for Applicants' invention. Check imaging is – relatively speaking – almost as old as the hills. Attached as Exhibit 1 to my Declaration is a copy of an article, ***published on May 1, 1992,*** in the ABA Banking Journal, entitled "Check imaging: banks are getting the picture." The article describes some check imaging systems that

were in use at the time. The article notes that "[c]apturing images is not a new thought.... The question is, what do you do with the image?"

12. The article mentions various uses of check images, including archiving them. But it does not mention indexing the images, allowing the user to download an archive of the images, or enabling the user to peruse, organize, search and display the images on a customer application. Rather, the article notes that "[a]ccounts receiving image statements instead of actual checks ... are rerun through the image platform in order to print them onto paper for mailing with the account statement."

13. Granted, in 1992, the Internet had not yet come of mass-market age. But the Mosaic web browser was available in 1993, and Netscape's Navigator was released in 1994. And it wasn't long at all before banks started giving customers online access to their accounts and cleared paper check images.

14. Also, with the advent of the Check 21 federal regulatory scheme in 2003, banks were authorized to process check information electronically. Since that time, there has been increasing use of electronic bank statements, checks, deposit slips and other documents, rather than the paper documents themselves.

15. So the need has been there for a long time. The opportunity has been there for a long time. But others have failed to meet that need.

16. Banks and their customers would like to be able to have a paperless solution to the problem of dealing with the archives of banking documents. They would like to bring the power of the computer to bear on this situation. Bank customers currently do not have any convenient and efficient way to maintain imaged copies of bank statements, checks, deposit slips and other documents, on their own computers.

17. For many years, customers have relied on one of three methods to retain and archive their bank statements and financial transaction documents

18. The first, traditional, and still most-common method, is for the bank to mail the actual statements, checks, deposit slips or paper image copies to the customer. The customer then either files the statements, checks, deposit slips, and other physical documents for later manual retrieval, or individually scans the documents for electronic storage.

19. The drawbacks of the traditional method are obvious. The bank must retain and mail the documents to the customer. This is a costly, tedious, and inefficient process. The customer must also expend labor and use space to organize and store those documents. If the customer wants to convert those documents into a paperless format, the customer must scan, name, and store the documents individually. Even after all this work, the documents will not be indexed.

20. In a minor modification of the traditional method, some banks send customers minimized copies of the cleared checks. From the customer standpoint, this system has the same drawbacks of maintaining the original documents. Making matters worse, this alternative provides customers with a less legible copy of the original and makes electronic storage and organization even less practical, because customers cannot name scans containing multiple cleared check sheets by an individual check number.

21. The second, and increasingly common but exceptionally inefficient method, is for customers to log onto their bank Web site, enter a secure account access section, and view, download, and/or print statements and check images *individually*. This process is tedious, time-consuming, and unsatisfactory. We are aware of only one bank – Bank of America – that currently allows customers to download multiple cleared check images at a time.

22. Because images generally must be accessed individually, the user must tediously select each check image individually, and save, print, name, and/or store each retrieved check image. Some systems require an additional step to retrieve the image of the back side of the check. Afterwards, the user has no easy way to compile the imaged documents for a particular purpose. For example, it is difficult, if not impossible, for a customer to create folders of vendor or supplier specific images. Customers, likewise, cannot feasibly create a folder of images for a given day or month. Even if the time were taken to manually organize all the desired images, the images are not indexed. The only way to search for such images is by the name the customer gave it when the image was saved.

23. Moreover, many banks provide online access to check images for a limited period of time. Therefore, customers must be diligent to periodically log into their customer account and select and print and/or save each check image individually. Furthermore, if the server is unavailable, or customers do not have online access at the time the information is needed, online banking can be very frustrating. And if a customer needs to access a check image after it has been removed from online access, a great deal of time and expense is incurred to retrieve it.

24. The second method is entirely impractical for institutional customers that generate hundreds or thousands of checks each month. It would simply take too long to individually access, save, name, print, and/or store each check image.

25. The third method, used by some large commercial customers, is for the bank to prepare a CD of cleared check images and mail the CD to commercial customers requesting and willing to pay for this service.

26. Maintenance of the CD-based system is very cumbersome and expensive. A bank must make a single CD for each customer each month. The bank then must physically deliver

the CDs to the customer by mail or courier. Customers must load the CD and viewer software onto their computers and register each CD before searching. Then customers must search each CD in order to view and use the images. The system is generally only viable for large commercial customers making this type of image delivery unavailable for the majority of customers.

27. The CD-based system is also inefficient and unsuitable for many customers. From the customer's standpoint, the information is not immediately available due to processing and mail time. Large customers may need the information as close to real time as possible in order to properly manage cash and lockbox situations. The CD system does not allow for this timely delivery. Moreover, each CD generally contains a maximum of one month of data. Therefore, databases must be searched individually and cross database searching is not possible.

28. To this date, there are no third-party systems that both index and archive a multitude of cleared paper check images into a single downloadable data package and enable the customer to efficiently download, peruse, display, or search that information.

29. According to Wikipedia, online banking services were first introduced in 1981, more than 25 years ago. *See* http://en.wikipedia.org/wiki/Online_banking. Banks that serve customers only through the Internet, and not through retail branches, came into vogue in the mid-1990s. Accordingly, the problem – and the need for a solution – has existed for many years. But that need has gone unmet.

30. There is also a long-felt need for integrated record-keeping systems that can handle both paper-based and paperless banking. The use of online banking by commercial and retail customers has increased significantly over the past several years. In many ways, online banking is much more efficient than traditional banking. But with respect to record-keeping,

online banking is less efficient. Customers who still use paper transactions along with their online banking are not able to effectively integrate those paper documents with their automated systems.

31. Check 21 compounded the problems and the corresponding need for a solution. Banks are increasingly put in the position of being unable to return original documents to their customers. The checks, deposit slips, and other documents, have become a mixture of original documents and electronic images of the documents. As a result, customers greatly need an integrated paperless solution.

III. Indacon's OneClick Banking system implementation of the invention

32. In 2002, Indacon began working on a solution to this long-felt need by modifying its InfoCaesar product – which was designed to download and create indexed archives of web pages – to automatically capture banking information from bank websites. In 2004, Indacon focused earnestly on developing a new, behind-the-bank-firewall image capture method and complimentary user interface system, which Indacon marketed under the trademark "OneClick Banking."

33. Several years ago, Indacon began working with Local Oklahoma Bank. Indacon's OneClick Banking system successfully indexed images and supporting documentation for various kinds of transactions. Indacon was on the verge of selling its OneClick Banking services to Local Oklahoma, but International Bancshares Corp.'s acquisition of Local Oklahoma Bank – and the subsequent efforts to integrate their systems together – stranded that project.

34. In 2007, Indacon began extensive testing of a OneClick Banking prototype system at First National Bank of El Paso ("FNB"). Indacon overcame multiple challenges to develop a

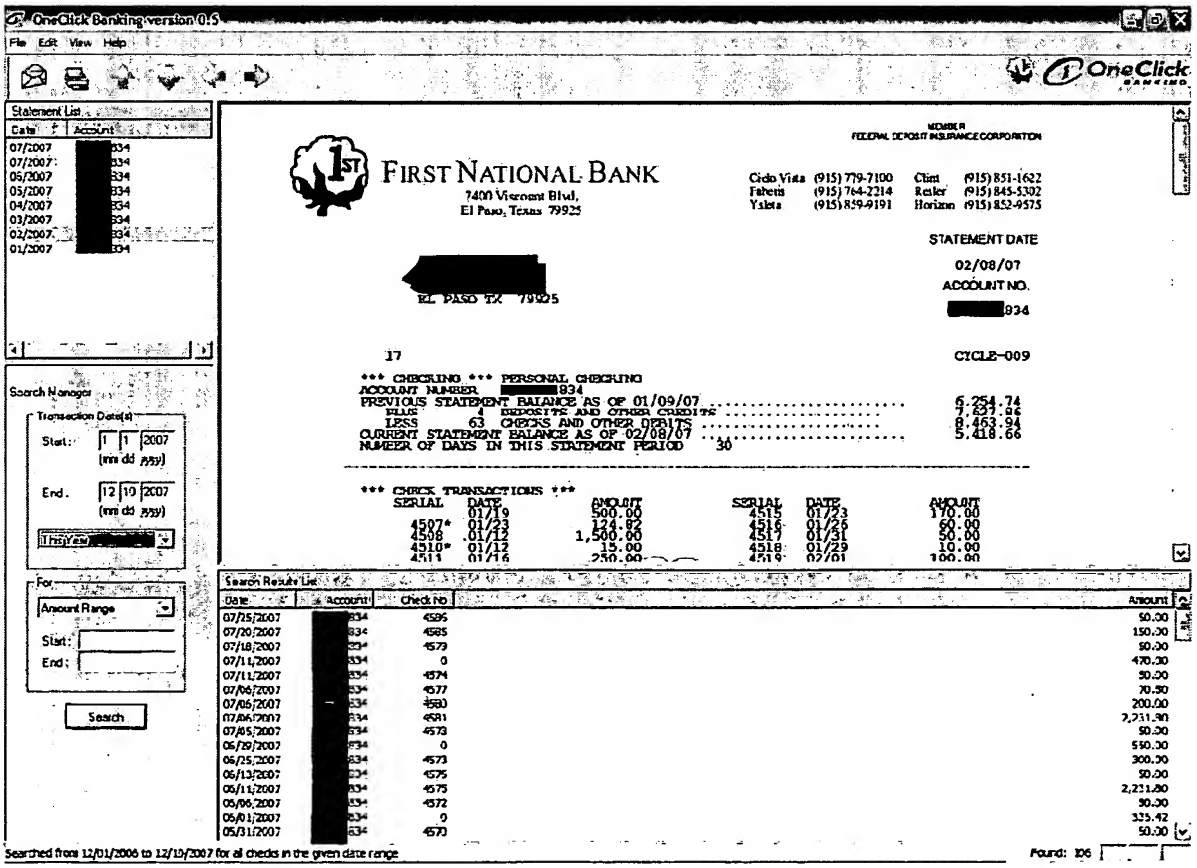
system that integrates with two different systems that FNB used to process its check images. That project is in the late stages of development, and Indacon expects it to bear fruit within the next several months. This year, Indacon also began testing its system with Frost Bank, based in San Antonio, Texas. That project has been delayed, at least temporarily, by unrelated problems with Frost Bank's Information Technology system.

35. The OneClick Banking system works as follows. As cleared check images and other electronic documents are made available on the bank's image server, the information is extracted and indexed by the OneClick Banking indexer. Consistent with claims 1, 15, 21, and 31 of the pending application, the OneClick Banking indexer regularly downloads batches of statements and images from a financial institution's image server, synchronizes the statements with the corresponding images, and generates monthly customer data packages. Each data package includes an archive of cleared check (and other documented transactions) images for that month and a searchable index that references those images. The data package is stored on a secure web server, and the customer is notified via e-mail of the availability of a downloadable indexed customer data package.

36. The customer then connects through the Internet to the secure web site where the data package is located and downloads the data package to his/her computer. The OneClick Banking system also includes a client application that – consistent with claims 1, 15, 21, and 31 of the pending application – enables customers to open, display, peruse, and search a downloaded customer data package. The software is made available to bank customers on the bank's Web site for download. If a customer has installed the software, then after the customer downloads a data package, the customer is prompted to open the OneClick Banking client application to peruse and search the downloaded data package.

37. Using OneClick Banking, customers can efficiently review their documents. The imaged documents are high quality digital images making them acceptable as proof of payment and are identical to the hard copy original documents. The OneClick Banking documents are automatically organized in folders according to the time period provided. Customers can search one or all folders of the imaged documents on their computers and retrieve all desired images. This means that regardless of how many months worth of data is stored on the customer's computer, all of the information can be searched with one click of the mouse. With OneClick Banking, customers can print, email and manage a single document or an entire folder of documents.

38. Below is a screenshot of OneClick Banking system client application, with personally identifiable information redacted.



39. The client application lists a plurality of selectable hypertext-formatted transaction statements – each corresponding to a downloaded customer data package – in the "Statement List" window area in the upper left region of the screen. When a user selects one of these statements, the selected statement is displayed in the large statement-or-check-display window area to the right. The checks in the displayed statement are hypertext-linked, and can be selected in order to display a corresponding cancelled check image within the same window.

40. A search manager located below the "Statement List" window area allows a customer to select or input a range of transaction dates with which to perform a financial transaction image search. The customer can search across one or a multitude of selected data packages. A drop-down list allows the customer to search for either "all" the financial transaction images within the selected transaction date range, only those financial transaction images that match an input "amount," only those financial transaction images that match an input "amount range," only those financial transaction images that match an input "check number," or only those financial transaction images that match an input "check number range." These fields, however, are not limiting. OneClick is easily adapted to search by any number of data fields, limited only by the number and character of the tags associated with the individual images. For example, if the bank were to apply optical character recognition or image character recognition when the documents are imaged, all elements of text would be searchable.

41. After the customer enters the search criteria and selects the "Search" button, the financial transaction images matching the search criteria are displayed in a third window area directly below the large statement-or-check-display window area. The search results are listed under various fields, such as date, account number, check number, and amount. Selection of any

of these fields causes the search results to be sorted, in ascending or descending order, by the selected field.

42. OneClick Banking customers can manage their statements, checks and other financial documents in a single, efficient system. Instead of storing and searching multiple CDs for information, OneClick Banking customers can receive OneClick Banking indexed data electronically by secure download or FTP. The desired data is easily accessible from one consolidated source. Those customers can also view, print, transfer or email check images or associated documents. Retail customers can benefit from the ability to own and manage their financial documents as well. OneClick Banking provides all customers with constant access to their information on their own computer systems with the assurance that the data is secure. Indacon has also developed the capability of creating additional databases on the customer's computer. For example, the customer could choose all images that have tax significance and create a tax file of images that could be sent to the customer's accountant at tax time.

43. OneClick Banking gives the bank the opportunity to reduce overall expenses, increase income and create an overall competitive advantage by providing its customers with paperless banking.

IV. Not Easy to Try – The Challenges of Implementation

44. The claimed invention was neither obvious to try, nor easy to implement. In implementing its OneClick Banking system, Indacon confronted a number of technical challenges, which it overcome through thousands of person-hours of development.

45. The customer data, bank statements and transaction images that OneClick Banking system extracts and aggregates originate from a variety of systems. For example, in Demand Deposit Accounts (DDA's) one will find a variety of transactions: regular paper checks

that are written and cleared, ACH and EFT transactions that are posted, deposits and withdrawals that take place at the bank teller window, online bill pay transactions, and deposits that are captured remotely. The images related to these various transactions are often captured and stored in systems that are separately administered and maintained.

46. Furthermore, banks often store their transaction images in very large multi-page TIFF files. In other words, images of hundreds of cleared checks are frequently stored in a single multi-page image file. Banks also frequently store multiple statements in a single batch file. Accordingly, the images and statements must be disaggregated and extracted from the banks' multi-page image and statement files.

47. In large banks (with sophisticated information systems groups), engineering a system to access the variety of applicable data sources, types and formats at the appropriate periods requires a thorough analysis of the operations business and systems processes. In community banks, these systems are often outsourced, increasing the challenges in identifying, accessing, and decoding the data for use by the customer.

48. The OneClick Banking system has three major components. First, the OneClick DVS Converter maps disparate source system formats and converts data. Second, the OneClick Indexer creates proprietary data indices. Third, the OneClick Banking Viewer provides bank customers the tools to view their bank statements and transaction images, search across unlimited accounts and statement periods, and email or print their banking documents.

49. Drilling down, the OneClick DVS Converter performs the following functions: (1) it retrieves a composite statement batch file of monthly (or quarterly or other periodic) transaction statements for a group of customers or accounts for which statements are routinely prepared on a given day of the month (or quarter or year or other period); (2) it converts the

composite statement batch file into hypertext-formatted transaction statements for each customer or account for that period; (3) it retrieves the cancelled check images (and images of other processed financial transaction documents such as deposit slips) corresponding to the transactions listed in the transaction statements in the composite statement batch file; (4) it uses "best guess logic" to pair the individual image files to the corresponding transaction listed on the statement; (5) it stores each hypertext-formatted transaction statement and its corresponding processed financial transaction images under a common parent directory; and (6) it generates hypertext links between the transactions listed on the hypertext-formatted transaction statements and the corresponding processed financial transaction document images.

50. Drilling down even further, the OneClick DVS Converter coordinates with the bank's statement schedule. Many financial institutions routinely generate monthly transaction statements for different batches of customers or customer accounts on different consistent days of the month. For example, a group of approximately 5% of a bank's customers' financial statements might be consistently generated and mailed out on the 1st day of the month, a group of another 5% of a bank's customers' financial statements might be generated and mailed out on the 2nd day of the month, and so on. (Frequently, Saturdays, Sundays, and holidays are omitted).

51. At regular intervals, the OneClick DVS Converter runs a data synchronization process to download batches of statements and images from the financial institution's image server. The process includes a number of error-checking and validation steps. The batch file the DVS Converter receives is typically in the form of an ASCII text and ASCII-formatted file comprising hundreds or thousands of statements processed by the financial institution on a given day. The DVS Converter splits this statement batch file into individual statements, which it then uses to generate hypertext-formatted statements in which the font, font size, and spatial layout of

the text is identical or nearly identical to the font, font size, and spatial layout of the text on the paper statements conventionally mailed to customers. After several non-trivial processing steps (described below), the hypertext-formatted statements will include links to the corresponding cleared check images that the DVS Converter extracted.

52. Each statement includes different blocks of data – such as a debit block, a check block, and a balance-by-date block – and a footer with a whole bunch of 65-character strings. Each 65-character string contains a bank account number, a date, an amount, a serial number for an image or images in the bank's transaction image database, and a lot of other information that is irrelevant to OneClick's purposes. Often, the data contains errors from miskeyed transactions or transactions that are not entered consistently by various tellers. And there is not necessarily any clear match between any given 65-character string and any given transaction listed above the footer. For example, if there are two checks written on the same day for the same amount, the 65-character string does not include any unique identifiers to dependably correlate a given check image with a given transaction listing.

53. The OneClick DVS Converter reverse engineers the 65-character strings to identify the portions containing the bank account number, amount, serial number, and other relevant information. Then, it uses "best guess logic" – comparing, for example the date and amount in the transaction listing with the date and amount codes in the 65-character string – to look for "dead on matches" and "probable matches."

54. The OneClick DVS Converter queries the bank's image database with the serial numbers it retrieved from the 65-character strings. The database may return either a dummy image (that might say, e.g., "no image available"), the front side of a cleared check, or both the front and back sides of a cleared check.

55. After retrieving images from the image database and using its "best guess" logic to match the images with their corresponding transaction listings, the DVS Converter generates hyperlinks for each transaction listing to available images.

56. The DVS Converter also includes algorithms to link orphaned images and transactions resulting from data quality issues such as miskeyed transactions, processing errors, and image replacement documents.

57. After the DVS Converter performs its tasks, the OneClick Indexer processes each hypertext-formatted transaction statement and generates a searchable index of the corresponding processed financial transaction document images. The OneClick Indexer also generates an archive file containing the hypertext-formatted transaction statement, the corresponding transaction document images, and the searchable index, and places it on a secure web server for customer download.

58. Some of the biggest challenges in the development of OneClick Banking have been making the DVS Converter able to quickly convert and index the data, and to do so in an automated fashion.

V. Skepticism by Others

59. Since 2004, Indacon approached numerous banks, including Jefferson State Bank, Local Oklahoma Bank, Wachovia Savings, USAA Federal Savings Bank, International Bank of Commerce, Plains Capital Bank, Trans Pecos Bank, Amegy Bank, American Bank of Corpus Christi, Frost National Bank, and others, with its OneClick Banking concept and product.

60. All were skeptical that we could make a product that worked and provide the benefits described. When we demonstrated a demo version of the product to customers, they expressed their belief that the demo was, effectively, little more than "smoke and mirrors,"

without truly functioning core components. They also expressed concern that substantial time, effort and expense would be required to implement the product. Many believed, quite frankly, that the technological challenges would prove insurmountable. After all, there have been so many problems associated with the implementation of electronic imaging and online banking that the industry is basically overwhelmed. They do not have the financial and human resources to solve all of their everyday problems.

61. Notwithstanding their skepticism, many banks have expressed great interest in the concept behind Indacon's OneClick Banking product.

62. I acknowledge that willful false statements and the like are punishable by fine or imprisonment or both (18 U.S.C. 1001) and may jeopardize the validity of the application or any patent issuing thereon.

Date

Stephen Marceau

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Check imaging: banks are getting the picture.

By Arend, Mark
Publication: ABA Banking Journal
Date: Friday, May 1 1992

Reducing clearing costs and improving customer service are priorities

for the '90s. Image processing meets both needs

Image processing technology is emerging from a bumpy adolescence and is showing signs of maturity that have banks taking a second look. Banks that believed in imaging's potential all along are being rewarded now, because they are among the first to see significant reductions in check processing costs. Image-based systems, which reduce the physical handling of paper checks, are now becoming commercially available, and in time, they are likely to redefine check processing.

Eventually--probably in this decade--say industry observers, full-scale check image processing will become a reality, starting with truncation of the paper checks at the bank

of first deposit. Numerous legal, technical, and financial hurdles have yet to be crossed, but the potential savings seem to justify a move in that direction.

In the meantime, industry vendors and their bank partners are putting the finishing touches on more limited check image processing solutions, including image statements and proof-of-deposit systems that let proof operators more efficiently encode check amounts, for example.

Fed support. Helping direct some image technology efforts is the Federal Reserve Board, which monitors costs associated with check clearing operations.

"From my own efforts to update some estimates compiled by two Federal Reserve economists a few years ago, it appears that the industry spends nearly $4 billion each year in the proof-of-deposit function," Paul Connolly, senior vice-president at the Federal Reserve Bank of Boston, said at a recent conference. "Using best estimates, the costs for payor banks to receive and process their inclearing checks, post the checks to customer accounts, prepare statements, and send statements and cancelled checks to customers, are over $10 billion annually," he added. "These figures certainly suggest that new approaches to reducing the labor intensity and paper intensity of the check system could be very cost effective."

The Fed is leading efforts to establish interbank applications of check image technology, so that the industry as a whole can benefit from it. But today's image systems don't include key capabilities necessary for inter-bank applications, said Connolly.

For this vision to be realized even in part, said Connolly, image systems would need to include the ability to store a complete check image and to retrieve the image and deliver it to another bank's image system.

The Fed is working with banks and vendors to develop systems that can communicate with each other and the standards that make that possible. "Between now and the end of 1993, we will be conducting tests in Reserve banks with high-speed archival systems from Unisys and IBM to test these crucial capabilities," said Connolly. In February, those vendors demonstrated to the Fed their ability to exchange images between different systems. "The quality of the images they produced was very encouraging," says Connolly.

Additionally, the Federal Reserve is working with several industry groups, including the ABA, to develop check image interchange standards. The American National Standards Institute (ANSI) initiated a working group early last year to outline the parameters for such standards.

Other organizations are working to streamline the check clearing process as well. An

electronic check truncation pilot program was launched in March involving small corporate checks. That project is sponsored by the National Automated Clearing House Association, the Fed, and the National Association for Check Safekeeping (see "Operations Briefs," p. 84). And the Electronic Check Clearing House Organization, formed in 1990, is promoting electronic check presentment as a means of making the check payment system more efficient.

Is there a common denominator to such efforts? "Given the volume of checks in the system and the number of players in the clearing process, it's natural that everyone doesn't gravitate to the same approach," notes Connolly. "The good news is that the banking industry as a whole is looking for ways to make the paper-based system more efficient."

Meanwhile, banks are moving ahead with plans to install image technology systems after a period of waiting for major platforms to be announced--and delivered--to the marketplace. Many banks have reacted warily to early reports of imaging's perceived benefits, especially because of the high cost of installing such systems. But the banks that teamed up with vendors in efforts to develop image systems are that much closer to having imaging platforms in place when interbank check clearing does become more image based.

Imaging advantages. Besides gaining operating efficiency, banks that have invested in check image technology are exploiting new marketing opportunities, such as offering new products and services to customers. For example, some banks that use the technology offer their customers image statements, which eliminate the cost of mailing multiple checks to customers each month.

"The postage savings are enough to defray the investment in the equipment," says Lindsey C. Lawrence, president of BayBanks Systems, Inc., the technology division of BayBanks, Inc., a $9.5 billion-assets bank holding company in Boston. A 25-cent fee for the service, which the bank calls CheckView, also helps cover the cost of the technology. "But the marketing appeal of image statements is the main reason for offering them," notes Lawrence. Not every bank that offers image statements chooses to charge a fee for the service, but BayBanks felt that eventually it would want to do so. Therefore, notes Lawrence, the bank decided to make the fee known from the outset. Besides, she adds, market research indicated that 60% of customers surveyed were willing to pay 25 cents per month for CheckView. "That was a strong indicator to us that the fee would be accepted," she says. Customers opposed to paying a fee for their monthly statement simply decline the CheckView option.

In BayBanks' case, image technology from BancTec Systems, Inc., Dallas, and Cincinnati Bell Information Systems (CBIS), Inc., Cincinnati, supplements check sorter and statement preparation systems already in place. "It didn't require a major overhaul of our system,"

says Lawrence.

CBIS markets software called ImageBanc, which combines check images with customer account records for production of image statements. ImageBanc also interfaces with other high-speed check processing systems, such as the Unisys Image Item Processing System, from Unisys Corp., Blue Bell, Pa.

BancTec markets high-speed check processing software called ImageFirst, which in September will include proof-of-deposit (POD) capabilities. Image POD brings greater efficiency to proof tasks, including balancing and MICR (magnetic ink character recognition) encoding, because proof operators don't handle the checks, but view check images on a workstation screen.

The missing link. Image POD capability has been imaging's missing link since banks first expressed interest in the technology years ago. Of the three major providers of image processing platforms--Unisys, NCR, and IBM--only Unisys currently has an image POD product on the market.

Offerings from IBM and NCR are planned for release before yearend. NCR's image transport system, the 7780, became available April 1, following a period of beta testing at Wachovia Bank of Georgia's operations center in Atlanta.

In mid-March, Detroit's Comerica Bank, with $14.5 billion in assets, began using image proof-of-deposit technology and offering image statements, a product the bank calls CheckPhoto.

Besides CBIS's ImageBanc product, Comerica has implemented Unisys's Item Image Processing System (IIPS), which includes a high-speed reader/sorter equipped with an image camera that scans documents and item processing workstations where proof operators view and encode the checks. IIPS reformats the image files so that they can be exported to ImageBanc, which produces the image statements.

"Operators still have to enter the data, but operators using IIPS are typically twice as fast as those using traditional proof systems," says Brian Blair, director of marketing for payment systems products at Unisys. "Banks would need half the staff doing data entry in proof," he says, "because the operator doesn't pick up the item, code it, and then drop it into a slot on the transport."

Instead, when the checks come into the bank for clearing, they are scanned into a database, and the images of designated checks are presented to an operator at a terminal. These typically are checks that must be processed immediately in order to meet tight deadlines at other stops in the clearing cycle. The operator enters the amount of the

checks as they appear on the screen, a step that facilitates balancing. Other items are encoded on [power encoding] equipment later in the process.

Power encoding equipment is standard in most check image processing platforms. The way the Unisys system is designed, says Blair, once a block of items, roughly 3,000 checks, is in balance, the system instructs the operations manager to load the transit, or pre-sorted off-us items going out as cash letters to other banks, onto the power encoding machine. At that point, the items are sorted into their final bundles or pockets, says Blair, and the dollar amount is encoded.

Power savings. Power encoding procedures are one area where banks will see processing improvements thanks to image POD systems. "Instead of encoding everything as it comes in, banks can selectively power encode items that have to get out the door first," says Ned Miltko, senior vice-president at Littlewood, Shain & Co. (LSC), a financial systems consulting firm based in Exton, Pa. "Items that are not sensitive can be done later."

LSC develops specialized services to users of the Unisys InfoImage platform, including CheckTrack Plus, a PC-based system that monitors check processing and workflow operations. The software produces management reports indicating, among other things, the condition of checks prior to being processed. Further gains in efficiency can be gained by spending less time preparing the work to be processed, and CheckTrack Plus helps identify sources--branches or internal departments--of unsatisfactory check work that might minimize a bank's return on the technology.

Since last spring, when Comerica began using the Unisys system, the volume of checks processed with image technology has increased significantly. In April 1991, the bank was clearing about 5,000 items per day with the system, says Greg Goleniak, the bank's vice-president, check processing. By November, the bank was averaging 30,000 items per day and at that time, it accepted a new software release and new power encoder equipment from Unisys. From that point on, "we've been processing 300,000 items per day, and on a peak volume day, we processed 510,000 POD unencoded items," says Goleniak. "That's an important distinction to make, because we expect to realize the savings from [power encoding] those items," he says. "We expect to realize a 20% labor savings."

The image-captured checks are stored the same way traditionally processed checks are stored. Accounts receiving image statements instead of actual checks, however, are rerun through the image platform in order to print them onto paper for mailing with the account statement.

Goleniak says the bank does not plan to charge a fee for providing image statements at this time. But future applications of the technology may warrant charging a fee. "The big customer service advantage to imaging comes when archiving is available," says Goleniak,

referring to the ability to store item images for long periods of time and retrieve them for account inquiries. "When we can save the images for, say, 30 days, we can offer image access in the branches for better customer service, or through a home banking service."

Like most new technologies, expense is a major consideration in the early stages of deployment, and costs tend to decline over time. Optical disk storage is being used by numerous banks as a statement storage method (see "Bank applications fuel optical storage market," ABA BJ, Oct. 1991, p.77), but is considered too expensive still for long-term check storage, compared to microfilm. Banks are required to keep records of account transactions for seven years under the Uniform Commercial Code. Big Blue weighs in. Comerica's instate rival, Michigan National Bank, is one of several banks that has been working with IBM on image capabilities based on that vendor's image processing platform, ImagePlus High Performance Transaction System. IBM announced availability of the system, which runs on an upgraded version of IBM's Check Processing Control System architecture, in February. Other banks working with IBM on the technology include First Tennessee National Corp., Memphis, and Providence, R.I.-based Fleet.Norstar Financial Group, which, like Michigan National, have announced check image statement offerings in their respective markets.

Unlike many users of image systems, Michigan National doesn't expect to save significantly on postage. "We're a little unique in that 80% of our retail customers allow us to safekeep their checks already," says Charles W. Kight, executive vice-president, operations and information technology, at the $10.6 billion-assets bank.

"We send those customers a listing of their checks that have cleared, so in reality, we'll pay a little more in postage to send them check image statements."

Kight sees other applications of the technology in the future, but only when business lines can support the associated procedural changes. "Imaging will be used pervasively," he says, "but it's a question of when to use the technology, not for its own sake, but for a business reason."

IBM's imaging efforts for financial services have been under the direction of Dr. Louise Nielsen for the past year. "Capturing images is not a new thought," she says. "The question is, what do you do with the image?

In that vein, IBM is perfecting its version of character recognition, which will enable the system to read the courtesy--or amount--box on checks, saving proof operators from doing so. Part of the ImagePlus High Performance Transaction System environment is a document identification capability which, on an individual document basis, looks for a given field, such as the courtesy box, in order to capture and process the amount. "In the future, this architecture will look at multiple fields on a document, and not just checks,"

says Nielsen.

IBM is testing character recognition on checks, but, like other vendors developing such capabilities, its system is not able to recognize a high enough percentage of check amounts to make the technology commercially attractive. The vendor is planning to bring banking customers in to run tests on their check processing work, to better judge accuracy rates for themselves.

With so many banks expressing interest in image technology, IBM is leaving "user exits" in its software, allowing individual banks to customize aspects of the software for competitive advantage. Some banks choose to customize the software on their own, and others turn to third-party providers, such as Check Solutions, Inc., Memphis, to customize and support the technology. Capital investment. Image technology is a major capital investment no matter how carefully a bank approaches the decision to use it. Installing an image item processing platform can run well into the millions of dollars, so many providers are looking for ways to make the technology more affordable.

NCR announced availability of its 7780 transport system this spring. Unlike other systems, the 7780 was originally designed as an imaging system, instead of adding imaging technology to existing equipment, says Kathleen Dyer, NCR's director of imaging systems in the financial systems division. The 7780, which processes up to 500 documents per minute, complements other NCR imaging systems that process up to 1,700 documents per minute. The system includes character amount recognition for scanning and storing handwritten check amounts.

"Banks discovered early on that it would be hard to cost justify [purchasing] mainframe-based check processing equipment," says Dyer. "We competed at Wachovia with the other vendors, and we were the only one able to offer an immediate return on investment."

The 7780 imaging applications are controlled by Interl microprocessing technology, which tends to cost less to install and maintain than larger operating environments. The software is OS/2-based and can also run on the Unix operating system, as opposed to a proprietary operating system. NCR's new transport is also less expensive than other systems because it processes items at a lower rate than the high-speed systems more commonly associated with check processing. "It's like photography," says Rick Ooten, an NCR imaging product specialist. "Taking a picture of a person is one thing, but taking a picture of a bullet coming out of a gun requires a lot more technology."

The cost of implementing a version of the system that can handle 300,000 transactions per day costs roughly $1.5 million to $1.7 million, says NCR's Kathleen Dyer. Added processing power needed to run other vendors' offerings can run several times that amount, she notes. Outsourcing option. Another option is to outsource image processing

to one of a growing number of third parties that provide the service. Nationar, a Woodbury, N.Y. outsourcer, had signed up three clients, all savings banks, as of the end of March.

"A lot of banks like to consider themselves leading edge technologically" says Stephanie Berger, business manager of Nationar's image statement product, "but not all of them can afford it. That's where the outsourcing alternative comes in."

Berger says that banks considering implementing check image processing or offering check image statements can use providers like Nationar to pilot test the technology to see if it catches on in their markets. They can then either continue to outsource or bring the function in-house.

Now that IBM's High Performance Transaction System is operational, EDS, the outsourcing firm based in Dallas, has begun to market those image processing capabilities to clients on the West Coast. EDS' San Diego facility is equipped to clear clients' checks using imaging, and other facilities will gain that capability as market conditions require it, says Joe Cothran, division vice-president for back-office operations.

"We currently mail about 2 million DDA statements per month from our California mail house," notes Cothran, "so we have a fairly substantial client base today. One reason we decided to put the [imaging] lab in California is that there were a large number of IBM early install program participants that were financial institutions in the California marketplace, so we think the competitive pressures are likely to show up there fairly quickly now."

Imaging vendors will announce still more systems in the months ahead, as the market for image systems matures. Banks currently working with vendors on systems, and those considering doing so, would do well to influence the vendors where possible toward developing standard systems, say industry observers. By doing so, all banks will benefit down the road from this important technology, and electronic interbank check clearing, or the "checkless society," may one day be more than pie in the sky.